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ABSTRACT

Part of the Project CAREER guidance component, this manual was created to assist educators in understanding and effectively using the "Dictionary of Occupational Titles" (DOT). The manual is essentially a workbook of exercises in DOT utilization. Materials excerpted from Appendixes A and B of DOT, Volume II, are appended. (TA)

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Guidance
Workshop Manual

The Dictionary Of Occupational Titles

"A Basic Tool for Counselors and Teachers"

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FOREWORD

The infusion of occupational competence into the daily school experience includes more than the need for classroom-instructional type materials. All areas of the school environment should be equipped with the information which students seek about jobs. One vital area, of course, is the entire arena of pupil personnel services. The awareness, exploration, and skill development activities in classrooms must be supported and supplemented in the guidance offices and, ideally, in a career information resource center.

One important resource document familiar to most counseling personnel is the Dictionary of Occupational Titles. The volumes of the "DOT" contain a wealth of information about thousands of occupations. Project CAREER feels that the DOT can be invaluable to educators as they continue to add ways of providing occupational competence programs; therefore, this manual was created to assist in understanding and using the somewhat complicated DOT effectively.

The reader is referred to two other Project CAREER documents which relate directly to the DOT. The first, "Instructions for the Use of Career Preparation Analysis Charts (Careerograms)", introduces and details the use of a comprehensive chart synthesizing vital information about individual occupations. The second document is a compilation of careerograms for the 122 Project CAREER occupations under investigation. Another guidance related manual on the establishment of "Career Information Centers" is also available from the Project. Hopefully these materials will be of significant assistance to school personnel.

The materials presented in this document have been developed in consultation with Dorothea C. Overholt, past Director of the Career Resource Center, Newton Public Schools, Newton, Massachusetts.

Since the contents of this manual represent a guided, step by step exercise in the DOT utilization, it will be necessary for the user to have before him/her Volumes I and II of the DOT.

Vincent P. Lamo
Director

**SOME REASONS FOR USING THE
DICTIONARY OF OCCUPATIONAL TITLES**

The DOT is a nationally recognized, standard method for classifying occupational information.

The United States Employment Service uses the DOT classifications for matching applicants with job openings in their placement program.

The DOT is considered the best classification system for setting up a career resource center. (See the CAREER INFORMATION SERVICE, page 35.)

Much of the commercial and free occupational information available is classified and described according to the DOT.

Volume I contains nearly 22,000 job descriptions for separate occupations arranged alphabetically by job title. It enables a counselor or teacher to be exact about job titles and descriptions when talking with students. However, it must be understood that jobs are described in broad, all-inclusive terms, and job definitions should be supplemented by information concerning specific jobs in particular industries or localities.

Volume II helps in talking with students about occupational fields and job ladders or relationships. For example, turn to Volume II, page 39 and 40. Occupations in Medicine and Health.

HOW DO YOU USE THE
DICTIONARY OF OCCUPATIONAL TITLES

Volume I - The Dictionary

Use just as you would an ordinary dictionary to look up a job title. Titles are exact, and the dictionary can be a bit difficult to use when looking up a general title such as "doctor".

Sometimes titles are reversed as in draftsman, architectural.

Each title has an industrial designation in parenthesis and a 6 digit classification number following the title as in cabinet maker (woodworking)
660.280

The classification number is important for:

1. Classifying, filing and retrieving occupational information in a Career Resource Center.
2. Using Volume II which is arranged according to classification numbers.
3. Identifying an occupation in category, division and group, and in using the last three digits to understand worker traits in relation to data, people and things.

WHAT IS THE MEANING OF THE 6 DIGIT CLASSIFICATION NUMBER?

Turn again to Volume II, page 1, Occupational Categories, Division and Groups.

EXAMPLE: Surveyor 018.188

1st digit, 0, designates occupational category: professional, technical and managerial

2nd digit, 01, designates occupational division: Engineering and architecture

3rd digit, 018, designates occupational group: surveyors

THE FIRST THREE DIGITS ALWAYS DESIGNATE THE CATEGORY, DIVISION AND GROUP

The last three digits designate the occupation's relation to DATA, PEOPLE AND THINGS in that order. Turn to Volume I, page XVIII.

To continue the example of Surveyor 018.188

4th digit, 018.1, indicates relation to data: coordinating

5th digit, 018.18, indicates relation to people: insignificant

6th digit, 018.188, indicates relation to things: insignificant

Interpretation of DOT number 018.188: Surveyor is a professional level occupation in the field of architecture and engineering. He coordinates data and has no significant relation to people and things.

WORKSHEET FOR LEARNING TO USE VOLUME I OF THE D.O.T.

In Volume I of the Dictionary of Occupational Titles, look up each of the following titles and get the classification number.

Surveyor: _____

Brake Mechanic: _____

Cytotechnologist: _____

Cytotechnician: _____

Mayor: _____

Construction Engineer: _____

Assembler: _____

Doctor: _____

Physician: _____

**PRACTICE SHEET FOR INTERPRETING
THE SIX DIGIT CLASSIFICATION
NUMBER: COUNSELOR 045.108**

Instructions: Interpret the classification number:

Counselor 045.108 for meaning.

0

04

045

045.1

045.10

045.108

97

Instructions: Interpret the Qualifications Profile for Instructive Work, Fine Arts, etc., .028, on page 226.

Volume II.

GED 5 6

SVP 7 8 9

Aptitudes

G 1 2

V 2

N 3 4

S 3 4

P 3 4

Q 3 4

K 3 4

F 2 3

M 2 3 4

E 4 5

C 1 3 5

Interests

5

6

8

Temperaments: Worker must adjust to

1

4

5

7

9

X

Physical demands required of worker are

S

L

4

5

6

APPENDIX

For ease of reference, the following material is excerpted from Appendix A and Appendix B of Volume II of the 1965 Dictionary of Occupational Titles:

RELATION TO DATA, PEOPLE AND THINGS

... The last three digits of the occupational code number of a job express the job's relationship to Data, People, and Things. Only those relationships which are significant in terms of the requirements of the job are reflected in the code numbers. The incidental relationships which every worker has to Data, People and Things—but which do not seriously affect successful performance of the essential duties of the job—are not reflected. Each successive relationship includes those that are simpler . . .

DATA (4th digit)	PEOPLE (5th digit)	THINGS (6th digit)
0 Synthesizing	0 Mentoring	0 Setting-Up
1 Coordinating	1 Negotiating	1 Precision Working
2 Analyzing	2 Instructing	2 Operating—Controlling
3 Compiling	3 Supervising	3 Driving—Operating
4 Computing	4 Diverting	4 Manipulating
5 Copying	5 Persuading	5 Tending
6 Comparing	6 Speaking—Signalling	6 Feeding—Offbearing
7 No significant relationship	7 Serving	7 Handling
8 } No significant relationship	8 No significant relationship	8 No significant relationship

APTITUDE

- VERBAL**—The ability to reason with words, to understand and use concepts expressed in words.
- NUMERICAL**—The ability to reason with numbers, to deal intelligently with quantitative materials and ideas.
- ABSTRACT**—This is a non-verbal, non-numerical measure of reasoning power. It is the ability to see relationships among things - objects, patterns, diagrams or designs.
- SPATIAL**—This is the ability to visualize or picture mentally the shape, size and position of objects when shown only a picture or pattern.
- CLERICAL**—This is the ability to be quick and accurate in perceiving and marking simple letter and number combinations.
- MECHANICAL**—This is the ability to comprehend mechanical principles and devices and the laws of everyday physics.
- SPELLING**—The ability to use properly words of the English language.
- GRAMMAR**—This is the ability to distinguish between correct and improper grammar, punctuation, and wording of sentences.

APTITUDES

(Specific capabilities and abilities required to learn a task or job.)

G = Intelligence or general learning ability

V = Verbal, ability to understand words and ideas associated with them, and to use words effectively

N = Numerical ability: quick and accurate arithmetic performance

S = Spatial perception, ability to comprehend forms in space and to understand relationships of plane and solid objects.

P = Form perception, ability to make visual comparisons and discriminations.

Q = Clerical perception, ability to observe detail in words and number.
Ex.: proofreading

K = Motor coordination, ability to coordinate eyes, hands and fingers rapidly and accurately

F = Finger dexterity, ability to manipulate fingers rapidly and accurately

M = Manual or hand dexterity

E = Eye-hand-for coordination (such as in truck driving)

C = Color discrimination (not color blind)

In the D.O.T., Volume II, page 653, aptitudes are coded in the above letters and rated on a scale from 1 to 5, 1 being the highest level.

INTERESTS

Preferences for certain types of work activities or experiences, with accompanying rejection of contrary types of activities or experiences. Five pairs of interest factors are provided so that a positive preference for one factor of a pair also implies rejection of the other factor of that pair.

- | | | |
|--|-----|--|
| 1. Situations involving a preference for activities dealing with things and objects. | vs. | 6. Situations involving a preference for activities concerned with people and the communication of ideas. |
| 2. Situations involving a preference for activities involving business contact with people | vs. | 7. Situations involving a preference for activities of a scientific and technical nature. |
| 3. Situations involving a preference for activities of a routine, concrete, organized nature | vs. | 8. Situations involving a preference for activities of an abstract and creative nature. |
| 4. Situations involving a preference for working for people for their presumed good, as in the social welfare sense, or for dealing with people and language in social situations. | vs. | 9. Situations involving a preference for activities that are nonsocial in nature, and are carried on in relation to processes, machines, and techniques. |
| 5. Situations involving a preference for activities resulting in prestige or the esteem of others | vs. | 0. Situations involving a preference for activities resulting in tangible, productive satisfaction. |

WORKING CONDITIONS

Working conditions are the physical surroundings of a worker in a specific job.

1 Inside, Outside, or Both:

1 Inside: Protection from weather conditions but not necessarily from temperature changes.

0 Outside: No effective protection from weather.

B Both: Inside and outside.

A job is considered (inside) if the worker spends approximately 75 per cent or more of his time inside, and (outside) if he spends approximately 75 per cent or more of his time outside. A job is considered "both" if the activities occur inside or outside in approximately equal amounts.

2 Extremes of Cold Plus Temperature Changes:

(1) Extremes of Cold: Temperature sufficiently low to cause marked bodily discomfort unless the worker is provided with exceptional protection.

(2) Temperature Changes: Variations in temperature which are sufficiently marked and abrupt to cause noticeable bodily reactions.

3 Extremes of Heat Plus Temperature Changes:

(1) Extremes of Heat: Temperature sufficiently high to cause marked bodily discomfort unless the worker is provided with exceptional protection.

(2) Temperature Changes: Same as 2 (2)

4 Wet and Humid:

(1) Wet: Contact with water or other liquids.

(2) Humid: Atmospheric condition with moisture content sufficiently high to cause marked bodily discomfort.

5 Noise and Vibration:

Sufficient noise, either constant or intermittent, to cause marked distraction or possible injury to the sense of hearing and/or sufficient vibration (production of an oscillating movement or strain on the body or its extremities from repeated motion or shock) to cause bodily harm if endured day after day.

6 Hazards:

Situations in which the individual is exposed to the definite risk of bodily injury.

7 Fumes, Odors, Toxic Conditions, Dust, and Poor Ventilation:

- (1) Fumes: Smoky or vaporous exhalations, usually odorous, thrown off as the result of combustion or chemical reaction.
- (2) Odors: Noxious smells, either toxic or nontoxic.
- (3) Toxic Conditions: Exposure to toxic dust, fumes, gases, vapors, mists, or liquids which cause general or localized disabling conditions as a result of inhalation or action on the skin.
- (4) Dust: Air filled with small particles of any kind, such as textile dust, flour, wood, leather, feathers, etc., and inorganic dust, including silica and asbestos, which make the workplace unpleasant or are the source of occupational diseases.
- (5) Poor Ventilation: Insufficient movement of air causing a feeling of suffocation; or exposure to drafts.

TEMPERAMENTS

Different types of occupational situations to which workers must adjust.

- 1 Situations involving a variety of duties often characterized by frequent change.
- 2 Situations involving repetitive or short cycle operations carried out according to set procedures or sequences.
- 3 Situations involving doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.
- 4 Situations involving the direction, control, and planning of an entire activity or the activities of others.
- 5 Situations involving the necessity of dealing with people in actual job duties beyond giving and receiving instructions.
- 6 Situations involving working alone and apart in physical isolation from others, although the activity may be integrated with that of others.
- 7 Situations involving influencing people in their opinions, attitudes, or judgments about ideas or things.
- 8 Situations involving performing adequately under stress when confronted with the critical or unexpected or when taking risks.
- 9 Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against sensory or judgmental criteria.
- 0 Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against measurable or verifiable criteria.
- X Situations involving the interpretation of feelings, ideas, or facts in terms of personal viewpoint.
- Y Situations involving the precise attainment of set limits, tolerances, or standards.

PHYSICAL DEMANDS

Physical demands are those physical activities required of a worker in a job.

The physical demands referred to in this Dictionary serve as a means of expressing both the physical requirements of the job and the physical capacities (specific physical traits) a worker must have to meet the requirements. For example, "seeing" is the name of a physical demand required by many jobs (perceiving by the sense of vision), and also the name of a specific capacity possessed by many people (having the power of sight). The worker must possess physical capacities at least in amount equal to the physical demands made by the job.

Factors

- 1 Lifting, Carrying, Pushing, and/or Pulling (Strength). These are the primary "strength" physical requirements, and generally speaking, a person who engages in one of these activities can engage in all. Specifically, each of these activities can be described as:
 - (1) Lifting: Raising, or lowering an object from one level to another (includes upward pulling).
 - (2) Carrying: Transporting an object, usually holding it in the hands or arms or on the shoulder.
 - (3) Pushing: Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking, and treadle actions).
 - (4) Pulling: Exerting force upon an object so that the object moves toward the force (includes jerking).

The five degrees of Physical Demands Factor No. 1 (Lifting, Carrying, Pushing, and/or Pulling), are as follows:

S Sedentary Work

Lifting 10 lbs. maximum and occasionally lifting and/or carrying such articles as dockets, ledgers, and small tools. Although a sedentary job is defined as one which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.

L Light Work

Lifting 20 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 10 lbs. Even though the weight lifted may be only a negligible amount, a job is in this category when it required walking or standing to a significant degree, or when it involves sitting most of the time with a degree of pushing and pulling of arm and/or leg controls.

M Medium Work

Lifting 50 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 25 lbs.

H Heavy Work

Lifting 100 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 50 lbs.

V Very Heavy Work

Lifting objects in excess of 100 lbs. with frequent lifting and/or carrying of objects weighing 50 lbs. or more.

2 Climbing and/or Balancing:

- (1) Climbing: Ascending or descending ladders, stairs, scaffolding, ramps, poles, ropes, and the like, using the feet and legs and/or hands and arms.
- (2) Balancing: Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or erratically moving surfaces; or maintaining body equilibrium when performing gymnastic feats.

3 Stooping, Kneeling, Crouching, and/or Crawling:

- (1) Stooping: Bending the body downward and forward by bending the spine at the waist.
- (2) Kneeling: Bending the legs at the knees to come to rest on the knee or knees.
- (3) Crouching: Bending the body downward and forward by bending the legs and spine.
- (4) Crawling: Moving about on the hands and knees or hands and feet.

4 Reaching, Handling, Fingering, and/or Feeling:

- (1) Reaching: Extending the hands and arms in any direction.
- (2) Handling: Seizing, holding, grasping, turning, or otherwise working with the hand or hands (fingering not involved).
- (3) Fingering: Ficking, pinching, or otherwise working with the fingers primarily (rather than with the whole hand or arm as in handling).
- (4) Feeling: Perceiving such attributes of objects and materials as size, shape, temperature, or texture, by means of receptors in the skin, particularly those of the finger tips.

5. Talking and/or Hearing:

- (1) Talking: Expressing or exchanging ideas by means of the spoken word.
- (2) Hearing: Perceiving the nature of sounds by the ear.

6. Seeing:

Obtaining impressions through the eyes of the shape, size distance, motion, color, or other characteristics of objects. The major visual functions are: (1) acuity, far and near, (2) depth perception, (3) field of vision, (4) accommodation, (5) color vision. The functions are defined as follows:

- (1) Acuity, far—clarity of vision at 20 feet or more.
- (2) Depth perception—three dimensional vision. The ability to judge distance and space relationships so as to see objects where and as they actually are.
- (3) Field of vision—the area that can be seen up and down or to the right or left while the eyes are fixed on a given point.
- (4) Accommodation—adjustment of the eye lens to bring an object into sharp focus. This item is especially important when doing near-point work at varying distances from the eye.
- (5) Color vision—the ability to identify and distinguish colors.